

REMARKS

Reconsideration is requested.

Claims 1-76 have been canceled above, without prejudice.

Claims 77-104 have been added. No new matter has been added.

Specifically, claims 77-91 are similar to the issued claims of the parent U.S. Patent No. 6,361,767. Claims 77-91 recite the covalent attachment of a sunscreen or shine agent to the reactive sites formed by the reduction of the hair at the surface. The issued claims of the parent patent provides a similar method wherein a colorant is covalently attached to the reactive sites.

The specification teaches, for example, at pages 15-17, that sunscreen and shine agents, as well as the colorants of the claims of U.S. Patent No. 6,361,767, can be covalently attached to the reactive sites of the hair produced by the claimed method. No new matter has been added.

The details of claim 92 are described on pages 16-17 of the specification.

Claim 93 is similar to claim 77 wherein the reducing agent of claim 77 has been recited in claim 93 as the hydride and polymer solutions described, for example, on pages 4-5 of the specification with the specifically recited conditions being described on page 12 of the specification. Moreover, claim 93 is similar to claim 77 in that claim 93 recites the covalent attachment of a sunscreen or a shine agent. Claim 93 is also similar to the claims of the parent patent (U.S. Patent No. 6,361,767) in that the method of claim 93 provides for the covalent attachment of a colorant. Claim 93 also provides for covalent attachment of a hydrophobic compound, as described, for example, at page

17, lines 19-24 of the specification. Support for new claims 103 and 104 may be found, for example, at page 12, lines 28-30 of the specification.

The claims are definite and supported by an adequate written description which teaches those of ordinary skill how to make and use the claimed invention without undue experimentation.

The Examiner interview of September 8, 2004 with Examiner Venkat is acknowledged, with appreciation.

An interview with Examiner Tran was scheduled however and a further interview with Examiner Tran, or other Examiner responsible for examination of the application, is requested in the event the application is not considered to be in condition for allowance after consideration of the following amendments and remarks.

The undersigned was advised during the interview with Examiner Venkat that Examiner Tran was unavailable due to an unforeseen emergency.

While the interview with Examiner Venkat was appreciated, the applicants believe that the particular circumstances of the present application file history (which included the Patent Office withdrawing the application from issue) make Examiner Tran's input and insight invaluable. It is further requested that the person referred to as "QA" on page 2 of the Office Action dated June 8, 2004, be available for an interview with the undersigned and Examiner Tran in the event the Patent Office continues to reject the present application. A separate Request is attached for a further interview for the reasons and under the circumstances described above.

As indicated in the Examiner Interview Summary, Examiner Venkat raised a number of new concerns regarding the patentability of the now-canceled claims over the

art of record. The additional rejections alluded to in the Interview Summary are not of record and, as noted in the Interview Summary, the Examiner will issue a new non-final rejection in the event any previously unstated rejection is asserted.

The Examiner's comments in the second paragraph of page 2 of the Office Action dated June 8, 2004, are noted. The amended claims do not recite the objected-to "said reducing generates 0.1% to 5% by weight of cystein with respect to the total amino acids." The applicants note however that methods of measuring the amount of cysteines are well known to those of ordinary skill in the art. The applicants will provide an example of such a procedure in the event the Examiner and/or "QA" believes the same to be necessary.

As for the Examiner's and/or "QA's" objection to the phrase "only on the surface of said fibres to a depth of less than 10 μ m", the Examiner and "QA" are requested to appreciate that claim 1 of the parent U.S. Patent No. 6,361,767, includes such a recitation, such that the suggestion of unpatentability "on its face" of the now-canceled claims based, even if only in part, on this phrase is contrary to the Patent Office issuance of the parent patent. Moreover, the Examiner is requested to see the attached copy of MPEP § 1701 which states, in part, that every patent is presumed valid and that the question of validity or invalidity is exclusively a matter to be determined by a court. The recitations of the claims issued in the parent U.S. patent, and similarly recited in the pending claims, are definite and adequately supported by an enabling disclosure which demonstrates that the applicants were in possession of the claimed invention at the time the application was filed.

The relevance (and meaning) of the Examiner's comment that "And, as well as people have different thickness and amounts of hair to begin with." is not clear and clarification is requested regarding the same in the event the application and above claims are rejected.

Methods for measuring whether reactive sites are generated on the surface of hair fibers to a depth of less than 10 μm are disclosed, for example, in the present specification spanning page 21, line 20 through page 22, line 13.

The Section 112, first paragraph "enablement", rejection of claims 40-70 is moot in view of the above.

For many of the reasons stated above, the claims are submitted to be supported by an enabling disclosure. Consideration of the following further comments in this regard is requested.

As noted above, methods are available to those of ordinary skill in the art to determine that the reducing agent generates 0.1% to 5% by weight of cysteine with respect to the total amino acids of the hair. Moreover, those of ordinary skill in the art will be able, without an undue amount of experimentation, to determine that the reactive sites are generated only on the surface of the hair fibers at a depth of less than 10 μm .

The applicants note the following for completeness regarding the Examiner's comments on pages 3-4 of the Office Action dated June 8, 2004.

The nature of the invention actually provides a method wherein the at least one active compound is covalently fixed to the hair fiber at the reactive site generated by the reducing agent. The at least one active compound is not covalently "[fixed] with the reducing agent" as suggested by the Examiner in ¶ (1) on page 3 of the Office Action.

The applicants acknowledge, with appreciation, the Examiner's admission that "the art does not teach the use of reducing agent to break the disulfide bonds only on the surface of the hair". See, ¶ (2) on page 3 of the Office Action. In fact, this aspect of the presently claimed invention, which is not taught or suggested in the cited art, is an important distinguishing feature which defines the claimed invention over the cited art.

The Examiner states that the "relative skill of those in the art is professional." See, page 4, line 1 of the Office Action.

The applicants submit that the present application is directed to one of ordinary skill engaged in the research and development of products to be used to treat the hair. The presently claimed method may lead to a description, likely produced by a product marketing specialist, which may be marketed and sold to "hairdressers" for application to the hair.¹ The description which is included in the marketed product may likely be produced after a further reasonable amount of experimentation, such as may be performed by "hairdressers" employed by the applicants' assignee, and include a description of specific applications required for "different thicknesses and amounts of hair", which are believed to be the apparent specific concern of "QA".

One of ordinary skill in the art will be able to use the claimed invention without undue experimentation.

Contrary to the Examiner's assertion on page 4, ¶ (5) of the Office Action, the claims are not so broad so to read on "giving a light relaxing/bleaching treatment to hair, followed by virtually any known hair treatment such as coloring or perming." The claims

¹ The undersigned believes the Examiner stated during the interview of 16 March 2004 that the application was directed to "hairdressers" as one of ordinary skill in the art.

provide methods of creating reactive sites only on the surface of hair fibers, as recited in the claims, followed by covalent attachment of an active of the claims. The claims providing for covalent attachment of a colorant to the reactive sites require a colorant which will covalently react with the active sites.

While working examples are not required, the applicants again note that the specification describes a method for conforming that the surface of the reactive sites have a depth of less than 10 μm . Moreover, the examples demonstrate creation of reactive sites with a number of reducing agents and covalent attachment of a colorant (pages 22-23), hydrophobic group (page 23), shine agent (pages 23-24), sunscreen (pages 24-25), and colorant and sunscreen (pages 25-26). The specification provides a number of working examples.

The Examiner's statement on page 4 of the Office Action that "there is no guidance as to how the dept [sic] of the surface of the reactive sites cannot [sic, can?] be determined." is not correct. As noted above, pages 21-22 of the specification provide a method by which the depth and location of reactive sites can be confirmed. Moreover, as noted above, the Patent Office has previously confirmed by allowance of the parent patent that the specification teaches one of ordinary skill in the art how to create reactive sites only on the surface of keratin fibres to a depth of less than 10 μm and of covalently fixing at least an active colorant on the reactive sites.

The claims are submitted to be supported by an enabling disclosure.

The Section 103 rejection of claims 40-48 and 55-77 over U.S. Patent No. 3,892,845 (Cunningham) is moot in view of the above amendments.

The Section 103 rejection of claims 74-76 over (Cunningham in view of WO 96/03966 (Bailey) is moot in view of the above.

The Section 103 rejection of claims 49-54 over Cunningham in view of EP 0331750 (Shimura) is moot in view of the above.

Each of the cited references were considered by the Examiner in parent application which issued as U.S. Patent No. 6,361,767.

The claims are patentable over the combination of cited art. Consideration of the following is requested in this regard.

As noted by the Examiner, Cunningham teaches application of a keratin disulfide reducing agent followed by a dye reducing agent. See, page 5 of the Office Action. Even if Cunningham taught creation of reactive sites only on the surface of keratin fibers, which it does not, it would have been contrary to Cunningham to apply a colorant, as Cunningham teaches application of a dye reducing agent. Cunningham does not teach or suggest covalently fixing a sunscreen or shine agent or colorant or hydrophobic compound, as presently claimed.

U.S. Patent No. 3,892,845 (Cunningham) teaches treatment of hair with a keratin reducing agent and a dye reducing agent wherein the keratin reducing agent may include thioglycolic acid and salts thereof, threitol, bisulfate salts, bisulfite salts, sulfides and amine compounds. The keratin fibers are treated with the reducing agent for 15 to 60 minutes, rinsed and then treated with the "color striping composition" (see, column 3, lines 18-19 and column 3, lines 21-22, for example) or dye reducing agent for 15 to 60 minutes.

Cunningham discloses a method and a composition for removing the colour from coloured keratin fibers. This method utilises a combination of a dye reducing agent and a keratin reducing agent.

According to the paragraph bridging columns 1 and 2, the reducing agent is used to break the covalent disulfide linkage involved in the helix formation of the keratin fibers and thus to break the helix formation to allow the dye residues which are trapped in the helix to escape. The cleavage of the covalent disulfide linkages disengages the helix formation and in turn causes the swelling of the fibers material and allows for a more intimate and thorough contact of the dye reducing agent with the material.

Accordingly, the Cunningham patent, the target is the dye, and the keratin reducing agent is only used to permit the dye reducing agent to reach its target.

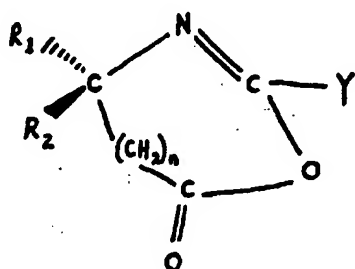
Consequently the cited patent neither discloses nor suggests the possibility of using a reducing agent to generate reactive sites on the keratin fibers for covalently fixing at least one active compound. Moreover, this patent whose purpose is to break the helix formation 1) to release the trapped dye and 2) to permit the penetration of the dye reducing agent, does not suggest using a reducing agent for breaking the disulfide linkage only on the surface of keratinous hair fibers to a depth of less than 10 μm . *A fortiori*, this patent does not suggest that breaking disulfide linkages and thus generating reactive sites only on the surface of the keratinous fibers would permit reduction of damage imparted to the hair fibers and to obtain a satisfactory result.

The claims are patentable over Cunningham.

There was no motivation in the cited art to combine the teachings of Cunningham and Bailey. Specifically, as noted above, Cunningham teaches reduction of dye already

in the hair fiber. Cunningham does not teach or suggest covalent fixation of colorant, or anything else, to any reactive sites in or on the hair fibers.

WO 96/03966 (Bailey) teaches, at best, treatment of hair with a reducing agent followed by treatment with an electrophilic group, such as azlactone, to "give the hair a plurality of hydrophobic groups characterized in that the hydrophobic group is selected from: C₁₀₋₃₀ alkyl and alkenyl groups." See, page 3, lines 18 and 22-26 and page 2, lines 25-32. The "azlactones" of Bailey are compounds of the following formula:



The following further compounds may be used in place of Bailey's azlactones: dialkyl disulphides (page 9 of Bailey), thiosulphonates, thiuramdisulphides, vinylsulphones (page 10 of Bailey), and vinyl sulfoximines (page 11 of Bailey). The reducing agent of Bailey is preferably ammonium thioglycollate (page 3 of Bailey). The process of Bailey is schematically exemplified on page 5 of Bailey wherein hair disulphide bonds are reduced and the resulting nucleophiles "on the surface of the hair and within the hair" and acylation of the hair. Bailey exemplifies their treatment process by reduction with thioglycollate treatment for 40 minutes at room temperature with a 15% solution at a pH of 9.3. See, page 12, lines 26-29, and page 13. Bailey does not

appear to disclose the use of any composition for adjusting the pH of the ammonium thioglycollate.

Bailey therefore teaches, at best, reduction of disulfide bonds "on the surface of the hair and within the hair" with thioglycollate, at a pH of 9.3, followed by attachment with hydrophobic groups. As confirmed by the Examiner on page 3 of the Office Action "the art does not teach the use of reducing agent to break the disulfide bonds only on the surface of the hair."

Covalent fixation of the colorant, hydrophobic compounds, shine agents or sunscreens of the present claims to reactive sites formed only on the surface of the keratin fibers to a depth of less than 10 μm would be contrary to Bailey and Cunningham either individually or in combination.

The claims are patentable over the combination of Cunningham and Bailey.

The claims are patentable over the combination of Cunningham and Shimura. There was no motivation in the art to combine Cunningham and Shimura as Cunningham is concerned with reducing dye already present in the hair, Shimura is interested in, in part, dyeing wool. Combination of the phosphine of Shimura in place of the reducing agent of Cunningham, would have still provided a process which would have involved the dye reduction of Cunningham. The applicants note that the claims of U.S. Patent No. 6,361,767 involve the use of phosphine and a colorant which is covalently fixed on the reactive sites produced by the phosphine reducing agent. As noted above, the Examiner has admitted that the art does not teach the use of a reducing agent to break the disulfide bonds only on the surface of the hair.

Shimura teaches a method of treating animal hair fibers with a water soluble organophosphine in a concentration of 0.005 to 3.0% "o.w.m." ("by weight relative to the fiber material to be treated" see, page 4, lines 28-32 of Shimura) at a pH of 3 to 7 (see, page 4, lines 54-57 of Shimura) for 5 to 60 minutes (see, page 5, lines 30-32 of Shimura) to "provide wool fibers with fastness to light by performing a certain type of after treatment in place of the conventional after treatment of oxidation or reduction bleaching" (see, page 3, lines 37-38 of Shimura) and/or to "enable low-temperature dyeing, and also to establish an easy and safe shrink resistance treatment with only one bath." (see, page 3, lines 39-40 of Shimura). Shimura admits on page 6 that the mechanism of their phosphine treatment with optional dyeing is not known. The only cosmetic treatment processes described or exemplified by Shimura are dyeing, bleaching and reduction in shrink resistance of wool fibers.

The claims are patentable over the combination of Cunningham and Shimura.

The applicants further submit that the claims are not anticipated by Shimura. As noted above, Shimura teaches reduction with a phosphine followed by dyeing. The claimed methods involving the use of phosphines require the covalent fixing of at least one of a sunscreen or shine agent. Shimura fails to literally or inherently teach to use of at least one of a screen or shine agent such that the claims are submitted to be patentable over Shimura. Shimura fails to teach each and every aspect of the claimed invention.

Similarly, the claims are patentable over Bailey which fails to teach each and every aspect of the claimed invention. Specifically, Bailey, at best, teaches reduction with thioglycollate "on the surface of the hair and within the hair" followed by attachment

of a hydrophobic group at the reduced sites. The presently claimed methods which involve reduction with a thiol, require the creation of reactive sites only on the surface of the keratin fibers to a depth of less than 10 μm and covalent fixing on the reactive sites of at least one sunscreen or shine agent. The claimed use of a thiol reducing agent requires, for example, the use of a polyquaternary ammonium hydroxide, such as is disclosed on pages 7-11 of the present disclosure, is not taught or suggested by the cited art.

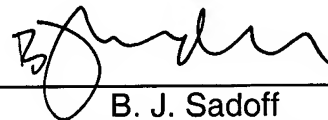
As Bailey fails to teach each and every aspect of the presently claimed invention, the claims are not anticipated by Bailey.

The claims are submitted to be in condition for allowance and a Notice to that effect is requested. The Examiner is requested to contact the undersigned in the event anything further is required in this regard.

Respectfully submitted,

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Chapter 1700 Miscellaneous

1701 Office Personnel Not To Express Opinion on Validity or Patentability of Patent

Every patent is presumed to be valid. 35 U.S.C. 282, first sentence. Public policy demands that every employee of the United States Patent and Trademark Office (USPTO) refuse to express to any person any opinion as to the validity or invalidity of, or the patentability or unpatentability of any claim in any U.S. patent, except to the extent necessary to carry out

(A) an examination of a reissue application of the patent.

(B) a reexamination proceeding to reexamine the patent, or

(C) an interference involving the patent.

The question of validity or invalidity is otherwise exclusively a matter to be determined by a court. Members of the patent examining corps are cautioned to be especially wary of any inquiry from any person outside the USPTO, including an employee of another U.S. Government agency, the answer to which might indicate that a particular patent should not have issued. No USPTO employee may pursue a bounty offered by a private sector source for identifying prior art. The acceptance of payments from outside sources for prior art search activities may subject the employee to administrative disciplinary action.

When a field of search for an invention is requested, examiners should routinely inquire whether the invention has been patented in the United States. If the invention has been patented, no field of search should be suggested.

Employees of the USPTO, particularly patent examiners who examined an application which matured into a patent or a reissued patent or who conducted a reexamination proceeding, should not discuss or answer inquiries from any person outside the USPTO as to whether or not a certain reference or other particular evidence was considered during the examination or proceeding and whether or not a claim would have been allowed over that reference or other evidence had it been considered during the examination or proceeding. Likewise, employees are cautioned against answering any inquiry concerning any entry in the patent or reexamination file, including the extent of the field of search and any entry relating thereto.

The record of the file of a patent or reexamination proceeding must speak for itself.

Practitioners can be of material assistance in this regard by refraining from making improper inquiries of members of the patent examining corps. Inquiries

from members of the public relating to the matters discussed above must of necessity be refused and such refusal should not be considered discourteous or an expression of opinion as to validity or patentability.

1701.01 Office Personnel Not To Testify [R-2]

It is the policy of the United States Patent and Trademark Office (USPTO) that its employees, including patent examiners, will not appear as witnesses or give testimony in legal proceedings, except under the conditions specified in **>37 CFR Part 104, Subpart C<. Any employee who testifies contrary to this policy will be *dismissed or removed*. **

Whenever an employee of the USPTO, including a patent examiner, is asked to testify or receives a subpoena, the employee shall immediately notify the Office of the USPTO General Counsel. Inquiries requesting testimony shall be also referred immediately to the Office of the USPTO General Counsel.

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Any individual desiring the testimony of an employee of the USPTO, including the testimony of a patent examiner or other quasi-judicial employee, must comply with the provisions of **>37 CFR Part 104, Subpart C.

A request by a third party to take deposition testimony of a patent examiner in a pending *ex parte* reexamination proceeding will generally be denied in view of the *ex parte* nature of the reexamination proceeding.< A request for testimony of an employee of the USPTO should be made to the Office of the USPTO General Counsel at least 10 working days prior to the date of the expected testimony.

If an employee is authorized to testify, the employee will be limited to testifying about facts within the employee's personal knowledge. Employees are prohibited from giving expert or opinion testimony. *Fischer & Porter Co. v. Corning Glass Works*, 61 F.R.D. 321, 181 USPQ 329 (E.D. Pa. 1974). Likewise, employees are prohibited from answering hypothetical or speculative questions. *In re Mayevsky*, 162 USPQ 86, 89 (E.D. Va. 1969) (deposition of an examiner must be restricted to relevant matters of fact and must avoid any hypothetical or speculative questions or conclusions based thereon); *Shaffer Tool Works v. Joy Mfg. Co.*, 167 USPQ 170 (S.D. Tex.1970) (deposition of examiner should be limited to matters of fact and must